



# PARK SCIENCE

INTEGRATING RESEARCH AND RESOURCE MANAGEMENT

Volume 18 • Number 1 • July 1998

National Park Service • U.S. Department of the Interior

## Social science in the national park system: An assessment of visitor information

By ROBERT E. MANNING AND BENJAMIN WANG

**I**T IS BECOMING A TRUISM THAT MANAGING national parks means managing people (fig. 1). The national park system will accommodate nearly 300 million visits annually by the turn of the century. Growing numbers of visitors present challenges to the National Park Service to meet its mission of protecting park resources and providing for public enjoyment.

People play an important role in this mission. Visitors are a primary cause of impacts to park resources, and research suggests that such impacts are a function of visitor behavior (activities, spatial and temporal use patterns) in addition to resource characteristics (Hammit and Cole 1987). Moreover, public enjoyment of the national parks must be defined through understanding of the visitor experience, which research suggests may sometimes be at odds with the perceptions of park managers (Manning 1986). This issue is further complicated by the diversity of sites within the national park system and the concomitant diversity of visitors. And visitors are only one of the publics of concern to national park managers: others include employees, residents of local communities, concessioners, interest groups, and, ultimately, society at large.

### Important management tool

The relationship between people and parks suggests the importance of social science. Within the National Park Service, social science has re-

cently been defined as "the disciplines of science that study humankind in relation to its cultural, social, and physical environment" (Machlis 1996). Social science is one of the three main divisions of human knowledge (along with natural sciences and the humanities) as traditionally defined by academic institutions.

Social science typically includes the disciplines of anthropology, archaeology, economics, geography, human psychology, political science, and sociology. All of these disciplines can contribute to our knowledge and understanding of visitors to the national park system.

Given the general importance of social science and the particular importance of information on visitors, to what extent is such information available to park managers? What types of information are available? What are the primary sources of this information? A recent study provided insight into these and related questions.

In 1996, the National Park Service was authorized by the Congress to design and implement an experimental user fee system, now commonly known as the Recreation Fee Demonstration Program. This legislation requires the National Park Service to monitor and evaluate the effects of this new fee system. This information will be used by the Congress to help determine if this new fee system will be continued on a permanent basis.



© 1986, Jeff Sutter

*Figure 1. Backpacking, sight-seeing, enjoying wildlife.... The pursuits of visitors to national parks are numerous and diverse. Yet, scientific information about the behavior of visitors and their park experience (motivations, level of satisfaction, and attitudes) is not commonly available to park managers according to the recent study. With a mission to protect park resources and provide for public enjoyment, the National Park Service needs consistent visitor information in order to manage parks and people as effectively as possible.*

*Continued on page 16*

## Visitor-related information inventoried

In preparing for this monitoring and evaluation plan, we conducted a baseline study of existing, relevant, visitor-related information available in the 50 park units included in the Recreation Fee Demonstration Program. The purpose of this study was to assess the potential for conducting pre- and post-treatment tests of the new fee system, and to select park units for study that had adequate baseline data available. The overall evaluation project will examine (among other things) the effects of fee changes on visitation patterns and visitor experiences, and their effects on local economies. This paper briefly summarizes the findings of the baseline study.

## Methods

The baseline study began by selecting relevant visitor-related variables to be included in an inventory of the 50 park units. This was done in conjunction with the NPS Social Science Program. Eleven variables were selected as shown in figure 2. The specific objective of the inventory was to determine which park units had information on these variables that had been collected sometime between 1990 and 1996.

The inventory was conducted using four approaches. First, a fax requesting information was sent to the office of the superintendent of each park unit. Park units were given the option of faxing back their responses or waiting to be contacted by telephone. Park units that had not responded within three business days were called daily until the information requested had been received. Second, key sources of social science information within the NPS were contacted for inventory data. These sources included regional science liaisons, the Visitor Services Project, the Public Use Statistics Program Center, and the NPS Social Science Program in Washington, D.C. Third, researchers known to be associated with the Park Service were contacted. These included cooperative park studies units, the Biological Resources Division of the U.S. Geological Survey, and academic institutions. Finally, a literature review was conducted using electronic databases and the World Wide Web.

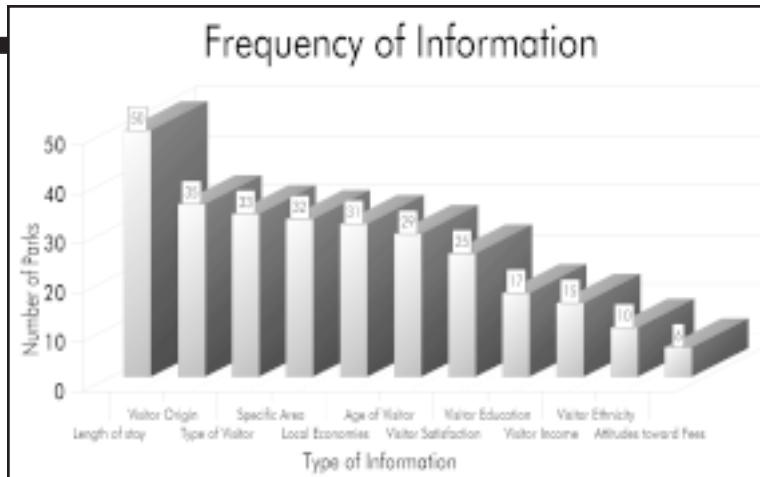


Figure 2. Eleven visitor information variables were inventoried in the 50 Recreation Fee Demonstration Program parks. The objective of the inventory was to determine which parks had information on these variables, collected sometime between 1990 and 1996.

## Information spotty

Study findings were compiled into a summary matrix that illustrates the availability of data on each of the 11 study variables for each of the 50 park units. Two conclusions were evident from this matrix. First, availability of visitor information is spotty at best. Only 51.5 percent of the matrix cells indicate data availability. However, this figure may overstate the case. In many instances, available data are very limited in their spatial or temporal character. For example, most data were collected for only one of the six years covered in the study, some were collected in only one season, some were collected for only one type of visitor, and some were collected for only one area within the park unit. Several park units had data on most of the 11 variables, but several park units had no data with the exception of length of stay, which is required for visitor use reporting.

Figure 2 illustrates the relative and absolute frequencies of availability for each of the 11 study variables. Nearly all of these variables should be considered basic to park management as they describe fundamental characteristics of park use and users. Information on park use patterns is important

tation on local economies is vital in maintaining productive relationships with surrounding communities.

Length of stay was the only study variable available to all park units included in the sample; this information is required to estimate annual visitation. However, this information is collected only infrequently. Some measure of visitor satisfaction is available in only half of study park units. Basic visitor characteristics, including education, income and ethnicity, are available in only a small minority of park units. These latter types of data are likely to become more important as society becomes increasingly concerned with matters of cultural diversity, social equity, and justice. To what extent do visitors to the national park system reflect society at large? How well do NPS facilities and services meet the needs of traditionally under-represented groups?

Figure 3 illustrates the sources of social science information. The numbers shown are the sources of each variable for each park unit. The numbers are slightly higher than might be expected because there are occasionally multiple sources for some variables. Scientists affiliated with academic institutions are the most common source

*Visitor-related information should extend beyond basic, descriptive patterns of visitor use, i.e., where visitors go, how long they stay, and what activities they participate in*

in planning and designing park facilities and services, including planning for visitor and resource protection. Visitor satisfaction is an important component of understanding the visitor experience and how management actions might add to or detract from the quality of the park experience. Knowledge of the economic impacts of park visi-

of information. However, three NPS programs—the Public Use Statistics Program Center, cooperative park studies units, and the Visitor Services Project—account for nearly half of all available information. Other sources of information are highly varied.

## Source of Information

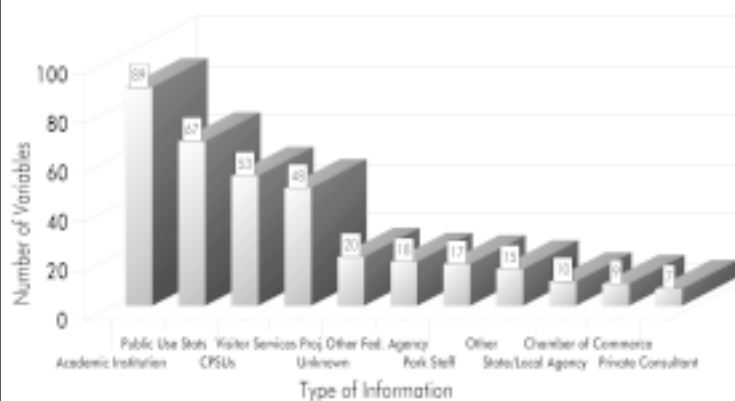


Figure 3. Visitor information is collected through various mechanisms. Numbers indicate the sources of each information variable for each of the 50 park units surveyed. The numbers are slightly higher than might be expected because multiple sources for some variables exist.

toward management, and other experiential variables are needed to understand and manage visitors—and parks—more effectively. **P<sub>5</sub>**

### Literature cited

- Hammit, W. and D. Cole. 1987. Wildland recreation: Ecology and management. John Wiley and Sons. New York, New York.
- Manning R. E. 1986. Studies in Outdoor Recreation. Oregon State University Press. Corvallis, Oregon.
- National Parks and Conservation Association. 1989. National parks: From vignettes to a global view. National Parks and Conservation Association. Washington, D.C.
- National Park Service. 1992. National parks for the 21<sup>st</sup> century: The Vail Agenda. Chelsea Green Publishing Company. Post Mills, Vermont.
- National Park Service. 1993. Science and the national parks II: Adapting to change. U.S. Government Printing Office. Washington, D.C.
- National Park Service. 1996. Usable knowledge: A plan for furthering social science research and the national parks. National Park Service. Washington, D.C.
- National Research Council. 1992. Science and the national parks. National Academy Press. Washington, D.C.
- National Research Council. 1993. A biological survey for the nation. National Academy Press. Washington, D.C.

*Robert Manning is a Professor in the Recreation Management Program at the University of Vermont. He conducted research at Arches National Park (Utah) for the application of VERP, a framework to address park visitor management and carrying capacity issues, and is involved in similar work at other parks now. He can be reached at the University of Vermont School of Natural Resources, George D. Aiken Center, Burlington, Vermont 05405-0088; phone 802-656-2684, fax 802-656-2623, e-mail: rmanning@nature.snr.uvm.edu. Benjamin Wang is also with the School of Natural Resources at the University of Vermont.*

### Findings troubling

If national park management truly implies visitor management, then the findings from this study are troubling. Though the study was not designed to be a comprehensive assessment of the status of social science information in the national park system, it offers insights into this issue. Enlightened and effective park management requires knowledge and understanding of visitors and other publics. In many, perhaps most, park units, much of this information—that concerning visitors—is largely unavailable. This problem extends beyond visitor management per se. Contemporary paradigms of public land management, including ecosystem management, conservation biology, and human ecology require integration and synthesis of natural and social science information. Lack of social science information suggests that this type of collaboration may be problematic.

The past several years have witnessed numerous calls for a greater emphasis on science—including social science—in the national parks (e.g., National Parks and Conservation Association 1989; National Park Service 1992; National Research Council 1992; National Park Service 1993; National Research Council 1993). The recent formulation of a new social science plan for the National Park Service is an encouraging step in this direction (National Park Service 1996). Part of this plan included a review of social science studies in the national park system during the same general time period (1990-1995) covered by the survey reported here. This review also reported a relatively low level of visitor-related research; an average of only 25 studies were completed each year across the national park system.

The study reported in this paper has two important limitations. First, it does not encompass all social science research in the national park system. It focuses only on visitor-related research and information. Second, the 50 parks included in the sample were chosen for their inclusion in the Recreation Fee Demonstration Program, not because they were representative of the national park system as a whole. However, the park units studied include a wide diversity of type, size, and geographic location.

### Recommendations

Study findings lead to two broad recommendations. First, information on visitors to the national park system needs to be collected on a more regular and systematic basis. Only one of the eleven variables addressed in this study—length of stay—is collected at all sample parks. This variable is required for public use reporting. It is apparent that when there is no policy or program directing collection of visitor use information, this information is largely unavailable to park managers. Second, visitor-related information should extend beyond basic, descriptive patterns of visitor use—where visitors go, how long they stay, and what activities they participate in. Visitor satisfaction, motivations, attitudes

*Visitor satisfaction, motivations, attitudes toward management, and other experiential variables are needed to understand and manage visitors and parks more effectively*